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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,531	08/17/2001	Douglas W. Akers	B-124	4276

7590

09/18/2002

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EXAMINER

PALABRICA, RICARDO J

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 09/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,531

Applicant(s)

AKERS

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7, 8 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 20-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment in Paper No. 6, dated 7/25/02, amending claims 1, 7 and 8, canceling claims 6, 9-19, and adding new claims 20-36, is acknowledged. This amendment is in response to Office Action dated 3/19/02.
2. As to claim 4, which pertains to an isotopic photon source, this was not considered for examination in said Office Action because it pertains to a non-elected species. Note that in response to the election requirement of 1/18/02, the applicant elected species B in Paper No. 4, date 2/26/02. Claim 4 was inadvertently not reflected in the summary of said Office Action as being withdrawn from consideration.
3. It is noted that the new claims are essentially re-formulations of the original method claims into apparatus claims. These method claims have not been examined because they do not read on the invention previously elected by applicant.
4. As to the new claims 20-25, they are directed to an invention that is independent or distinct from the invention originally claimed. The original claims disclose a non-destructive testing apparatus comprising a photon source, a detector that detects **gamma rays** and a data processing system. On the other hand, these new claims disclose an apparatus comprising a photon source, a detector **producing raw data**

indicative of a positron annihilation event and a data processing system. These new claims do not recite that the detector detects gamma rays and, as such, it can be another type of detector, e.g., one that is capable of detecting heat produced by the positron annihilation event. Clearly, these new claims pertain to an invention that is new, distinct and restrictable from the originally claimed invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits.

Accordingly, claims 20-25 are withdrawn from consideration as being directed to a nonelected invention. See 37 CFR 1.142(b) and MPEP 821.03.

5. As to the new claims 26-33, they are directed to an invention that is independent or distinct from the invention originally claimed. The original claims disclose a non-destructive testing apparatus comprising a photon source, a detector and a data processing system. Said new claims disclose an apparatus comprising a positron activation means, a detector and a data processing system. Clearly, a photon source is different from a positron activation means, and these new claims pertain to an invention that is new, distinct and restrictable from the originally claimed invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits.

Accordingly, claims 26-33 are withdrawn from consideration as being directed to a nonelected invention. See 37 CFR 1.142(b) and MPEP 821.03.

6. As to the new claims 34 and 35, they are directed to an invention that is independent or distinct from the invention originally claimed. The original claims disclose a non-destructive testing apparatus comprising a photon source, a detector that detects **gamma rays** and a **data processing system**. On the other hand, these new claims disclose an apparatus comprising a photon source, a detector **producing raw data indicative of a positron formation event and a positron annihilation event** and a **positron lifetime processor**. These new claims do not recite that the detector detects gamma rays and, as such, it can be another type of detector, e.g., one that is capable of detecting heat produced by the positron formation event and positron annihilation event. Also, a positron lifetime processor is different limitation compared to a data processing system. Clearly, these new claims pertain to an invention that is new, distinct and restrictable from the originally claimed invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits.

Accordingly, claims 34 and 35 are withdrawn from consideration as being directed to a nonelected invention. See 37 CFR 1.142(b) and MPEP 821.03.

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7. As to the new claim 36, it is directed to an invention that is independent or distinct from the invention originally claimed. The original claims disclose a non-destructive testing apparatus comprising a photon source, a detector that detects **gamma rays** and a data processing system. On the other hand, this new claim discloses an apparatus comprising a photon source, a detector **producing raw data indicative of a positron formation event and a positron annihilation event** and a data processing system. This new claim does not recite that the detector detects gamma rays and, as such, it can be another type of detector, e.g., one that is capable of detecting heat produced by the positron formation event and positron annihilation event. Clearly, this new claim pertains to an invention that is new, distinct and restrictable from the originally claimed invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits.

Accordingly, claim 36 is withdrawn from consideration as being directed to a nonelected invention. See 37 CFR 1.142(b) and MPEP 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,175,756 to Pongratz et al (see Fig. 1 and corresponding parts of the specification). Pongratz et al. disclose a device for detecting nitrogenous, phosphoric, chloric and/or oxygenous substances inside an object, particularly of explosives or addictive substances in pieces of luggage. He discloses an electron accelerator (1) of variable energy that generates an electron beam (2) impinging on a heavy metal target (3), creating bremsstrahlung photons (4) to scan a test object. Said photons cause creation of positron emitters in said object if it contains substances such as nitrogen, chlorine or phosphorus (see column 3, lines 30-33). The detector is an Anger camera that is essentially a position-resolving detector system for the annihilation radiation occurring from positron annihilation. On the basis of coincidence measurements, a list of coincidence events is established which is converted in the computer (11) into a density distribution of the detected substance (see column 4, 2nd to last paragraph). The computer (11) controls the electron accelerator (1) to adjust the energy of the bremsstrahlung photons (see column 3, lines 25-28).

Applicant's claim language reads on Pongratz et al. 's invention as follows: a) "data processing system" reads on computer 11; b) "output data indicative of a lattice characteristic of the specimen being tested" reads on the data regarding the identification and density distribution of the substance detected. Note that the identity and density of a substance (e.g., an impurity) present in a given specimen indicate certain characteristics of the lattice of that specimen.

Additionally, the clause, "producing output data indicative of a lattice characteristic of the specimen being tested" in claims 1 and 8 is essentially a method limitation or statement of intended or desired use. This clause, as well as other statements of intended use, do not serve to patently distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 152 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

Apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

9. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,980,901 to Miller, who discloses an apparatus for detecting common explosive materials by measuring the relative concentration of nitrogen in an object (see Fig. 5 and corresponding parts of the specification). A source of electrons (54) is directed to a bremsstrahlung converter target (60). X-rays produced by said converter target is directed to the object (50). The resultant production of annihilation photons from the nitrogen atoms in the object is detected by scintillation counters (66), and the signals from these counters are processed by a minicomputer (68) to provide an indication of the concentration of nitrogen in the object (see column 5, 3rd paragraph). An accelerator is one possible source of the electrons (see column 2, lines 39-41).

Applicant's claim language reads on Miller's invention as follows: a) "data processing system" reads on minicomputer 68; b) "output data indicative of a lattice characteristic of the specimen being tested" reads on the data regarding the concentration of nitrogen in an object. Note that the identity and concentration of an element, such as nitrogen, present in an object, indicate a certain characteristics of the lattice of that object.

See section 8 above regarding the clause, "producing output data indicative of a lattice characteristic of the specimen being tested" in claims 1 and 8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Alex et al. Miller discloses the applicant's claim except of the use of a germanium detector. Miller uses scintillation detectors for detecting annihilation photons.

Alex et al. teach the use of a Ge(Li) detector for detecting gamma rays emitted by a specimen subjected to non-destructive examination by positron annihilation. One having ordinary skill in the art would have recognized that the methods of Miller and Alex et al. are based on the same positron annihilation techniques and that Ge(Li) detector can be used in place of a scintillation detector in detecting annihilation photons.

Therefore, it would have been obvious to one having ordinary skill of the art at the time the invention was made to modify the apparatus, as disclosed by Miller, by the teaching of Alex et al. to substitute a germanium detector for the scintillation detector, as this is no more than the utilization of conventionally known designs/techniques of

nuclear instrumentation within the nuclear art, and the substitution of a detector by another well-known detector.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pongratz et al. in view of U.S. patent 3,803,416 to Strauss. Pongratz et al. disclose the applicant's claim except for the use of a germanium detector.

Pongratz et al. use an Anger camera which is a gamma camera using NaI scintillating materials. Strauss teaches the use of a germanium gamma-ray camera because it offers better energy resolution than an Anger camera (see column 1, lines 15+).

Therefore, it would have been obvious to one having ordinary skill of the art at the time the invention was made to modify the apparatus, as disclosed by Pongratz, to substitute a germanium gamma camera for the Anger camera in order to gain the advantage of better resolution, as this modification is no more than the utilization of conventionally known designs/techniques of radiation detection in the nuclear art, and the substitution of one detector by another well-known detector.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References C and D further illustrate prior art.

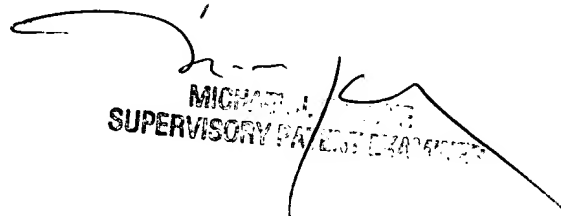
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-0285 for regular communications and 703-305-0285 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP
September 13, 2002


MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER